

LISTING OF THE CLAIMS:

Claim 1. (Currently Amended): A check valve for micro electromechanical structure devices, said check valve being connectable to a supercritical fluid hydraulic system being rapidly charged with pressurized fluid under superatmospheric pressures and comprising:

- a) a valve body having a fluid inlet conduit and a fluid outlet conduit;
- b) a valve chamber of a larger internal diameter than said conduits being interposed between said fluid inlet and fluid outlet conduit in fluid flow communication with said fluid inlet and fluid outlet conduits, a valve seat being formed between said valve chamber and an adjoining end of said fluid outlet input conduit;
- c) a fluid bypass channel connecting said fluid inlet outlet conduit and said valve chamber;
- d) and a freely movable valve member being located in said valve chamber and having an external diameter in slidable contact with the internal diameter of said valve chamber, said valve member being axially displaced into a first valve-open position within said chamber to facilitate an unobstructed flow by said pressurized fluid from said inlet conduit into said valve chamber and then flowing through said bypass channel for charging said system, and upon responsive to a letdown of pressure upon said system having been charged, said valve member being axially displaced within said valve chamber into contact with said valve seat in a second valve-closing position so as to inhibit

fluid flow through said check valve and seal said supercritical fluid hydraulic system.

Claim 2. (Original): A check valve as claimed in Claim 1, wherein said valve is self-sealing responsive to said valve member being moved into contact with said valve seat.

Claim 3. (Original): A check valve as claimed in Claim 1, wherein said valve comprises a permanent component of said system upon pressure letdown thereof in that said valve member is maintained in a sealing relationship with said valve seat.

Claim 4. (Original): A check valve as claimed in Claim 1, wherein said valve member comprises a plug member which is slidable within said valve chamber between said first position in which said bypass channel enables fluid flow communication between said valve chamber and said fluid outlet conduit to facilitate filling said system and said second position in sealing engagement with said valve seat so as to inhibit fluid flow through said check valve.

Claim 5. (Cancelled).

Claim 6. (Currently Amended): A check valve as claimed in Claim 5 1, wherein said hydraulic system is a component of a heating and cooling or pumping arrangement for supercritical fluids.

Claims 7-13. (Canceled).

Claim 14. (New): A check valve as claimed in Claim 1, wherein said fluid bypass channel comprises a conduit of an internal diameter which is approximately the size of the internal diameters of each of said fluid inlet and outlet conduits.